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REMARKS

Claims 1-20 are pending while claims 1-20 stand rejected under 35 U.S.C. §103(a). Claims 1-20 have not been amended and remain for consideration upon entry and consideration of the present amendment. No new matter has been added.

Claim Rejections -35 USC §103

Claims 1-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Asao et al. (U.S. Patent No. 6,268,678) in view of Radomski (U.S. Patent No. 4,882,515). Applicant respectfully traverses.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

Further, even assuming that all elements of an invention are disclosed in the prior art, an Examiner cannot establish obviousness by locating references that describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would have impelled one skilled in the art to do what the patent applicant has done. *Ex parte Levengood*, 28 U.S.P.Q. 1300 (Bd. Pat. App. Int. 1993). The references, when viewed by themselves and not in retrospect, must suggest the invention. *In Re Skoll*, 187 U.S.P.Q. 481 (C.C.P.A. 1975).

Neither Radomski nor the rotor and stator art as a whole provide a reason for one of ordinary skill in the art to modify Asao in the manner required to meet claims 1 or 11. *In re Laskowski*, 871 F.2d 115, 117, 10 U.S.P.Q.2d 1397, 1398 (Fed. Cir. 1989) ("Although the Commissioner suggests that [the structure in the primary art reference] could readily be modified to form the [claimed] structure, '[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification' ") (citation omitted); *In re Stencel*, 828 F.2d 751, 755, 4 U.S.P.Q.2d 1071, 1073 (Fed. Cir. 1987) (obviousness cannot be

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established "by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion that the combination be made"). There is no teaching or suggestions to combine elements of the prior art to produce the present invention. The present invention is thus nonobvious.

Applicant further maintains that the Examiner has used an improper standard in arriving at the rejection of the above claims under section 103, based on improper hindsight which fails to consider the totality of applicant's invention and to the totality of the cited references. More specifically the Examiner has used Applicant's disclosure to select portions of the cited references to allegedly arrive at Applicant's invention. In doing so, the Examiner has failed to consider the teachings of the references or Applicant's invention as a whole in contravention of section 103, including the disclosures of the references which teach away from Applicant's invention.

Regarding claim 1, the Examiner alleges that Asao et al. show a dynamoelectric machine comprising:

- A rotor composed of two flux carrying segments (22, 23), each segment having $P/2$ (8, P16) claw poles, wherein P is an even number, and
- N (2, Figure 4) independent sets of three-phase stator windings inserted in a plurality of slots defining a stator, each set of three-phase windings shifted from each other by $\pi/(3n)$ radians (Figure 4, $n=2$ giving 30 degrees).

The Examiner admits that Asao et al. do not show a rotor composed of more than two flux-carrying segments. However, the Examiner alleges that Radomski shows a rotor composed of more than two flux-carrying segments (70, 72, 82, 86) for the purpose of generating more electrical energy at low speed.

The Examiner states that since Asao et al. and Radomski are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others. Therefore, the Examiner concludes that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to

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make the rotor with more than two flux carrying segments as taught by Radomski for the purpose discussed above.

Radomski discloses adding a permanent magnet to the dual claw pole structure of the rotor. Radomski specifically states that “[i]n order to provide greater electrical output, alternators have been used that have a double claw pole type of rotor assembly. Such an alternator is disclosed in an advertising brochure that relates to a 41-DN SERIES/-TYPE 250 Generator of the Delco Remy Division of General Motors Corporation (Dec. 1965)”. Further, Radomski discloses that “[t]his invention differs from the Delco Remy alternator in that, among other things, one of the field coils is replaced by a permanent magnet.” (See column 1, lines 31-49.)

Asao et al. is centered around the end turns of a stator winding whereby the end turns on one side are flattened against each other such that there is no gap between adjacent end turns. Asao does not teach or suggest anything relative to electrical phase shifting of the stator for magnetic noise reduction. Electrical phase shifting of the stator arises in Figure 4 of Asao et al. Figure 4 is a circuit diagram of an alternator whereby there are two sets of 3 phase stator windings that are electrically offset by 30 degrees. Asao et al. disclose that “[b]ecause the slots 15a and the opening portions 15b are arranged to be evenly spaced at an electrical angle of 30 degrees, magnetic ripples which result in excitation forces which cause magnetic noise can be reduced”. Column 12, lines 16-19. Again, it is respectfully submitted that this offers nothing new relative to prior art since this was disclosed roughly 40 years ago.

Asao et al. disclose that, “an object of the present invention is to provide an alternator applicable for automotive use enabling the realization of improved reliability, *high performance*, and low cost . . .” (Emphasis added.) Column 2, lines 55-58. However, Asao clearly depicts and describes a conventional Lundell rotor that consists of two claw pole segments, such as in embodiment 1 of the preferred embodiments; “[i]n FIGS. 1 and 2, the automotive alternator is constructed by rotatably mounting a Lundell-type rotor 7 inside a case . . .” Column 4, line 65-66. The rotor construction is further defined in column 5, lines 18-32 and is clearly defined as a Lundell rotor. Finally, in the last embodiment, i.e., Figure 9, Asao makes an effort to broaden the coverage of the rotor construction by stating, “[e]ach of the above embodiments used a Lundell-type rotor

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having claw-shaped magnetic poles, but the same effects can be achieved using a Salient-type rotor having projecting magnetic poles." Column 17, lines 34-37. It is respectfully pointed out that neither a Lundell-type rotor, nor a salient pole rotor is a twin-coil rotor. Thus, Asao et al. teach away from a twin-coil rotor.

Further, Asao teaches windings that are orderly placed in slots such as rectangular hairpin windings. For example, Asao discloses using "insulated copper wire material having a rectangular cross section" (see column 5, lines 65-67), and "[h]ere in Embodiment 1, the strands of wire 30 are formed into a rectangular cross section, but the cross-sectional shape of the strands of wire 30 is not limited to a rectangular cross section and may be any generally flattened shape such as an elongated elliptical shape, etc." Column 10, lines 3-8. Applicant does not limit his disclosure to such windings.

In fact, Asao teaches away from traditional wound stators with round conductors. Asao disclose that "[b]ecause the strands of wire 30 are formed into a rectangular cross section, spaces between the coil ends can be easily filled, enhancing the above effects." Column 9, lines 62-65.

Still further, Asao teaches away from longer stator stack lengths. More specifically, Asao discloses that "[b]ecause the axial length of the stator 8 is formed shorter than the axial length of the rotor core, wind resistance is reduced, improving cooling characteristics and enabling the alternator to be made more compact", (column 9 line 31-34), and "[b]ecause the axial length of the stator may be shorter than the axial length of the rotor, wind resistance is reduced, improving cooling and enabling the size of the alternator to be reduced." Column 19, lines 5-8.

It is respectfully submitted that the natural design tendency with a twin-coil rotor, is for the stator axial length to become longer, not shorter. Therefore, Asao teaches away from a combination of a twin-coil rotor with stator phase shifting.

There is no suggestion or incentive that would have motivated the skilled artisan to modify the combined references as suggested by the Examiner. Accordingly it is respectfully requested that the rejection with respect to claims 1-20 be withdrawn.

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Conclusion

In view of the foregoing points that distinguish Applicant's invention from those of the prior art and render Applicant's invention not obvious, Applicant respectfully requests that the Examiner reconsider the present application, remove the rejections, and allow the application to issue.

If the Examiner believes that a telephone conference with Applicant's attorneys would be advantageous to the disposition of this case, the Examiner is invited to telephone the undersigned.

If additional charges are incurred with respect to this Amendment, they may be charged to Deposit Account Number 06-1130 maintained by Applicants' attorneys.

Respectfully submitted,

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